

Work Order ID 128548

128548

Page 1

Monday, January 19, 2015 8:00:14 AM

Item ID: D4680-041

• Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Skidtube Assembly

Start Date: 1/19/2015 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 1/19/2015 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals: Process Plan: MLS Date: 1/20/19

Tooling:

Date:

Run Start *NR1*

QC: Date: SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3492	E								
D4680	<u>✓ D</u>								
110	<u>per ECN 15-551 MRP 15-6-25</u>								
		0.00							

110

CNC Bend 1

Memo

0.00

CNC Delta 100 Bender

1- Bend as per dwg D4680 using bend program D4680 and Folio: 26

Verify measurement before cutting.

2- Cut FWD end as per dwg D4680

DGL 15-1-28

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube ☐</td> <td>Crosstube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
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Page 2

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NS1

Revision ID:

Item Name: Skidtube Assembly

Stop

NS2

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1

Cust Item ID:

Required Date: 1/19/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

120

Skidtubes

Skidtubes

Skidtubes

0.00

0.00

Memo

1-Cut Aft end as per dwg D4680

2-Deburr ends

3-Drill Aft & Fwd Cap holes using DT8678 & DT8901

4-Locate DT 10149 & Drill Ground wire hole on top of Tube.

5-Locate DT 10149 with #30 cleco in Ground wire hole, then Pilot Drill all X-Bolt holes using #30" drill. ****DO NOT OPEN AFT CAP HOLES****

6-Open ground wire hole .297" (1 at fwd end & 2 at aft end at 21.06" ref.)

Open ground wire holes .297" (2 at aft end 21.06)

8- 3 most fwd x-bolt holes must be laid out manually, open to #30.

9-Open Aft & Fwd Cap holes using .208" drill.

10- Open X-Bolt holes to .750" (8 places) ****DO NOT OPEN HOLES TO SECTION G-G ***

11- Drill Rivet Holes as per Dwg D4680 using DT10065 ****DO NOT DRILL RIVET HOLES ON SECTION G-G (TWO PLACES)

12-Deburr holes.

15-5-5

15-5-5

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Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
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Revision ID: Stop ***NS2***
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Start Date: 1/19/2015 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 1/19/2015 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	QC5- Inspect part completeness to step on W/O	0.00							
140									DAS
QC	Memo	0.00							9
Quality Control									9-89
150	Chemical Conversion Coat per QSI005 4.1	0.00							
150									
HandFinish	Memo	0.00							
Hand Finishing									
160	QC7-Inspect Chemical Conversion Coat	0.00							
160									
QC	Memo	0.00							
Quality Control									

① 15-05-07. DAS 9 9-89
1 0 15-5-7 Doc
1 0 15-5-7 JH

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FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence
		☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge
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Page 4

Item ID: D4680-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Skidtube Assembly
Start Date: 1/19/2015 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 1/19/2015 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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170

170

Skidtubes

Skidtubes

Skidtubes

Memo

0.00

1- Bond web as per Dwg D4680 & QSI 015

A/R 241 Sike Flex Batch: 131574
Exp Date: 15-10-21
start time: 7:30AM
end time: _____

2- Seal all faying surfaces using proseal and rivet Doubler as per Dwg D4680.

A/R Proseal Batch: M130986
exp date: 15-6-30
LET IT CURE FOR 7HRS
START TIME: 1030 AM
FINISH TIME: _____

3- Rivet doublers as per dwg

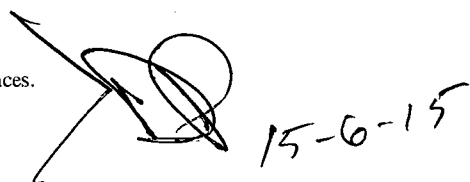
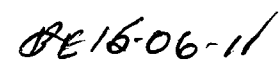
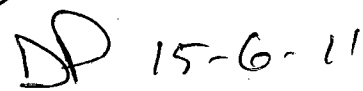
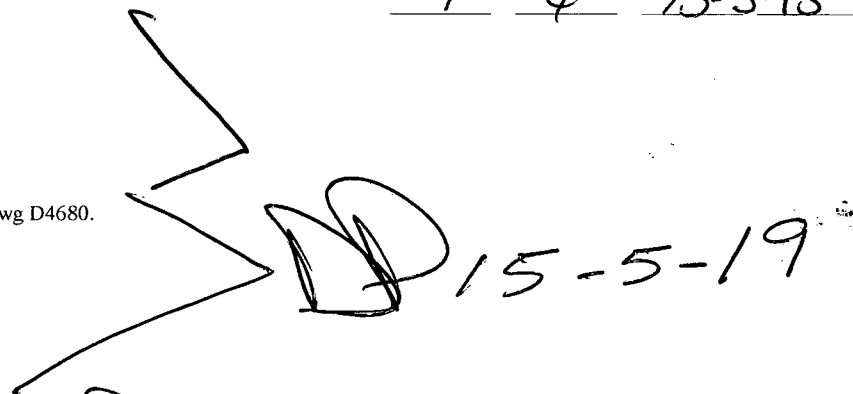
4- Open and chamfer holes on section G-G as per dwg. Blowout chips.

5- Weld spacers into place as per section G-G ***BACK DRILL***
A/R ALUM. WELDING ROD: M127865 and grind flush.

6- Ream holes section C-C as per dwg, deburr 8 places

7- Swage x-bolt spacers as per Dwg D4680 and section C-C 8 places.

8- Trim/Grind flush per QSI 002

1 4 15-5-13 DGC

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FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
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175	QC10- Inspect visual per QSI004- ground welds	0.00				1			DAS 38 9-89
175									
QC	Memo	0.00							
Quality Control									JUN 16 2015
180	QC5- Inspect part completeness to step on W/O	0.00				1			DAS 38 9-89
180									
QC	Memo	0.00							
Quality Control									JUN 16 2015
210	Pressure Wash per QSI005 4.3	0.00				1			
210									
HandFinish	Memo	0.00							
Hand Finishing	Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.								15-6-17 JUN 16 2015

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Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
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Work Order ID 128548

Monday, January 19, 2015 8:00:14 AM

128548

Page 7

Item ID: D4680-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Skidtube Assembly
Start Date: 1/19/2015 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 1/19/2015 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
260	HandFinishing	0.00							
260	HandFinish	0.00							
Hand Finishing	Memo								
	1- Install Wearplate & Ground Wire inserts as per Dwg D4680.								
	2-Inspect for Foreign objects								
	3- Install Fwd & Aft caps as per Dwg D4680 and Detail "A" & "B"								
	A/R 241 Sika Flex Batch: <u>14132392</u>								
	Exp Date: <u>16/1/15</u>								
	4- Assemble o'ring to plug as per dwg D3492-055 and apply o'ring lube								
	A/R 55-o'ring lube batch: <u>14131349</u> RTU 598 M132017 exp 15/07								
	5- Wing Walk as per Dwg D4680 and QSI 005 4.4								
	Batch: <u>14132599</u>								
270	QC5- Inspect part completeness to step on W/O	0.00							
270	QC	0.00							
Quality Control	Memo								

DAS
38
9-89

JUN 29 2015

BAS
38
9-89

JUN 29 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube ☐</td> <td>Crosstube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Large Fab ☐	Composite ☐	Supplier ☐																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
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Monday, January 19, 2015 8:00:14 AM

Item ID: D4680-041

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Skidtube Assembly

Start Date: 1/19/2015 **Start Qty:** 1.00

*** 1 ***

Cust Item ID:

Required Date: 1/19/2015 **Req'd Qty:** 1.00

*** 1 ***

Customer:

Reference:

Run Start *NR1*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop *NR2*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center ID

Operation Description

Set Up/ Run Hours

Tool ID	Tool #	Plan Code
---------	--------	-----------

Accept Qty	Reject Qty	Reject Number	Insp. Stamp

300

Identify as per dwg & Stock Location: _____

0.00

300

Packaging

0.00

Packaging

Memo

Packaging

DAS
6
9-89

AUG 18 2015

310

QC21- Final Inspection - Work Order Release

0.00

310

 $\bar{Q}C$

Memo

0.00

Quality Control

mw AUG 18 2015

ms AUG 18 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube ☐</td> <td>Crosstube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
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Monday, January 19, 2015 8:00:17 AM

Work Order ID: 128548

128548

Parent Item: D4680-041

D4680-041

Parent Item Name: Skidtube Assembly

Start Date: 1/19/2015**Required Date:** 1/19/2015**Start Qty: 1.00**

Required Qty: 1.00

Comments: IPP REV:A 13.04.16 NEW ISSUE DD VERF:JLM IPP
REV:B 13.08.08 PB2 DD VERF:JLM IPP REV:C
13.09.10 PB3 DD VERF:JLM IPP REV:D 13.11.14
AS PER DWG REV.B DD VERF:JLM IPP REV:C 14.11.24 AS PER
DWG REV.C DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
AN526C1032R10		Purchased		No			Each	107.0000		2			
AN526C1032R10													
Screw													
					<u>Location</u>		<u>Loc Qty</u>	<u>Loc Code</u>					
					FP001		2						
					108062		2						
					ST327		105						
					m128712		105						
D2973		Manufactured		No			Each	84.0000		2			
D2973													
Cross Bolt Spacer													
					<u>Location</u>		<u>Loc Qty</u>	<u>Loc Code</u>					
					LG001		84						
					107428		29						
					123939		55						
D3492-15		Manufactured		No			Each	37.0000		4			
D3492-15													
Plug													
					<u>Location</u>		<u>Loc Qty</u>	<u>Loc Code</u>					
					FP001		37						
					115874		20						
					122459		17						
REF (D3492-055)													

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube ☐</td> <td>Crosstube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐															
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐															
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐															
Large Fab ☐	Composite ☐	Supplier ☐																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
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Picklist Print

Monday, January 19, 2015 8:00:17 AM

Page 2

Work Order ID: 128548

128548

Parent Item: D4680-041

D4680-041

Parent Item Name: Skidtube Assembly

Start Date: 1/19/2015

Required Date: 1/19/2015

Start Qty: 1.00

Required Qty: 1.00

NAS1611-015

Purchased

No

Each

42.0000

4

NAS1611-015

O-RING

**

all stock

Location

Loc Qty

Loc Code

FP001

42

m126637

42

Y4

REF (D3492-055)

D2962-150

Manufactured

No

Each

21.0000

1

D2962-150

3.540 Outer Tube, Extrut

**

Location

Loc Qty

Loc Code

HALL

21

90871

21

1

Dec 15-1-28

D4681-041

Manufactured

No

Each

2.0000

1

D4681-041

Web Assembly

**

Location

Loc Qty

Loc Code

LG003

2

126872

2

100673 x1 Dec 15-5-13

D4686-1

Manufactured

No

Each

97.0000

8

D4686-1

Spacer

**

Location

Loc Qty

Loc Code

LG001

95

107104

93

97772

2

LG002

2

97772

2

15-6-15

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube ☐</td> <td>Crosstube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Large Fab ☐	Composite ☐	Supplier ☐																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence
		☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge
		☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other

Picklist Print

Monday, January 19, 2015 8:00:17 AM

Page 3

Work Order ID: 128548

128548

Parent Item: D4680-041

D4680-041

Parent Item Name: Skidtube Assembly

Start Date: 1/19/2015

Required Date: 1/19/2015

Start Qty: 1.00

Required Qty: 1.00

D4753-1 Manufactured No

Each 80.0000

D4753-1

Doubler

**

16
15-5-19

Location

Loc Qty

Loc Code

LG002

80

127246

80

Each

0.0000

16
3

AEIS-1032-130 AEIS8-1032-130 Purchased No

AFI S-1032-130

Rivnut

4654-1032-130 / M132317

(x3)

**

15/06/25

AN3C4A

Purchased No

Each

900.0000

3

AN3C4A

Bolt

**

15/06/27

Location

Loc Qty

Loc Code

FG

20

122814

20

M132189

x3

FP001

323

M130716

3

M131153

320

ST350

557

M130716

557

NAS1149F0332P Purchased No

Each

2,953.000

5

~~NAS1149F0332P~~

Washer

**

15/06/27

NAS1149C0332R

15-6-25

ME
per

EN
15-5-51

Location

Loc Qty

Loc Code

GA

222

122063

222

M131697

x5

ST260a

2731

m130325

2000

m131026

731

M132262

x5

Monday, January 19, 2015 8:00:17 AM

Shop Packet Print

Page 3

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube ☐</td> <td>Crosstube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
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Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
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Picklist Print

Monday, January 19, 2015 8:00:17 AM

Page 4

Work Order ID: 128548

128548

Parent Item: D4680-041

D4680-041

Parent Item Name: Skidtube Assembly

Start Date: 1/19/2015

Required Date: 1/19/2015

Start Qty: 1.00

Required Qty: 1.00

MS20601-AD4W3

Purchased

No

Each

146.0000

MS20601-AD4W3

Rivet

**

Location

Loc Qty

Loc Code

ST308

146

114538

146

Each

9.0000

**

D2965

Manufactured

No

D2965

Cap

Location

Loc Qty

Loc Code

FP001

9

99551

9

Each

685.0000

**

AN3C5A

Purchased

No

AN3C5A

Bolt

Location

Loc Qty

Loc Code

FG

5

122800

5

ST338a

680

M130770

664

M130851

16

Each

12.0000

**

D2965-3

Manufactured

No

D2965-3

Cap

Location

Loc Qty

Loc Code

FP001

12

120969

7

98923

5

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

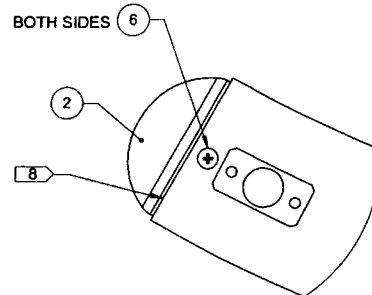
Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube ☐</td> <td>Crosstube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

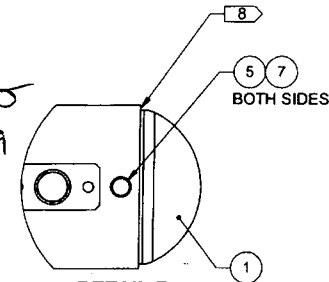
FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence
		☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge
		☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other

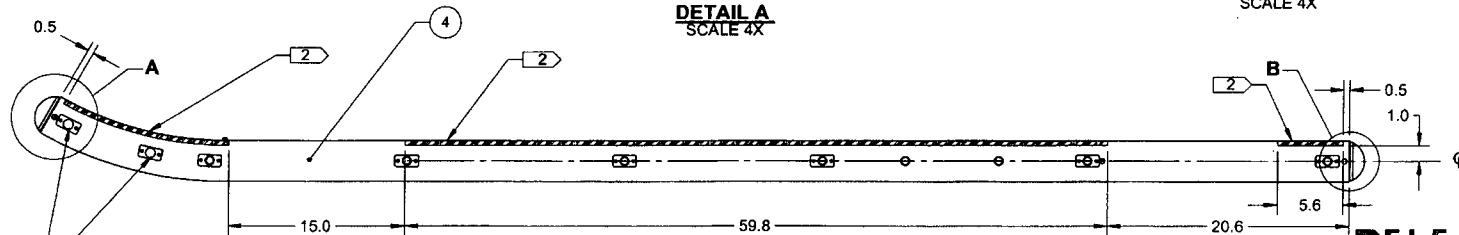
ITEM	QTY	P/N	DESCRIPTION
	X	D4680-041	SKIDTUBE
1	1	D2965	CAP
2	1	D2965-3	CAP
3	4	D3492-055	PLUG ASSY
4	1	D4680-043	SKIDTUBE SUB ASSY
5	2	AN3C5A	BOLT
6	2	AN526C1032R10	SCREW
7	2	NAS1149F0332P	WASHER (AN960-10L)



DETAIL A
SCALE 4X



DETAIL B
SCALE 4X



D4680-041 SKIDTUBE

INSTALL D3492-055 PLUG ASSY
AFTER SWAGING
(BOTH SIDES)

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: PAINT TOP SURFACE OF SKIDTUBE WITH MIL-W-5044 ANTI-SKID PAINT (WING WALK) AS INDICATED TO 1.00 ABOVE CENTERLINE PER QSI 005 SECTION 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4680-041" AND B/N PER QSI 044 METHOD 6.4 ON INNER RADIUS OF SKIDTUBE BEFORE INSTALLING D2965 CAP
- 7) WEIGHT: 18.56 lbs
- 8) SEAL FAYING SURFACES WITH SIKAFLEX -241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B-2 SEALANT

C	NAS1149F0332P WAS AN960-10L, AN526C1032R10 WAS AN526C1032-10, FWD GROUNDING STRAP FASTENER MOVED AFT (C5-3), Ø0.750 WAS Ø0.758 (B4-3).	AP	14.07.29
B	FWD CAP WAS D2965 NOW D2965-3, VARIOUS DIMENSIONAL CHANGES, D3492-055 PLUG ASSY WAS D3492-051, SWAGING DIMENSION NOW 0.650 WAS 0.661 (D6-2), ADDED DETAIL H (C2-3), MATERIAL D2962-150 WAS D2962-131 (A7-3), GROUND HANDLING THRU HOLES NOW WELDED, ADDED SECTION G-G (D3-2)	AP	13.09.10
A	NEW ISSUE	AP	13.02.13
REV.	DESCRIPTION	BY	DATE
DESIGN	AP		
DRAWN	AP		
CHECKED	ML		
MFG. APPR.	JLM		
APPROVED	MP		
DE APPR.	DS		
DATE	14.07.29		

DART AEROSPACE USA, INC.
KENT, WA

DRAWING NO. REV. C
D4680 SHEET 1 OF 3
TITLE SCALE
SKIDTUBE NTS

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2014-11-20

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

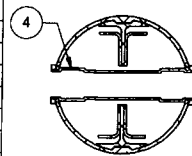
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Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
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Material									
Operator									
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Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
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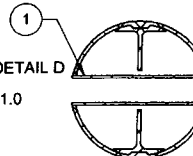
ITEM	QTY	P/N	DESCRIPTION
	X	D4680-043	SKIDTUBE SUB ASSY
1	2	D2973	SPACER
2	1	D4680-1	SKIDTUBE
3	1	D4681-041	WEB ASSY
4	8	D4686-1	SPACER
5	16	D4753-1	DOUBLER
6	3	AELS-1032-130	INSERT
7	3	AN3C4A	BOLT
8	32	MS20601AD4W3	RIVET, BLIND, CSK
9	3	NAS1149F0332P	WASHER (AN960-10L)



SECTION C-C
SCALE 4X
8 PL

INSTALL D4686-1 SPACER AS FOLLOWS (8 PL)
AFTER INSTALLING D4753-1 DOUBLERS PER DETAIL D

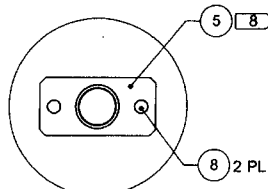
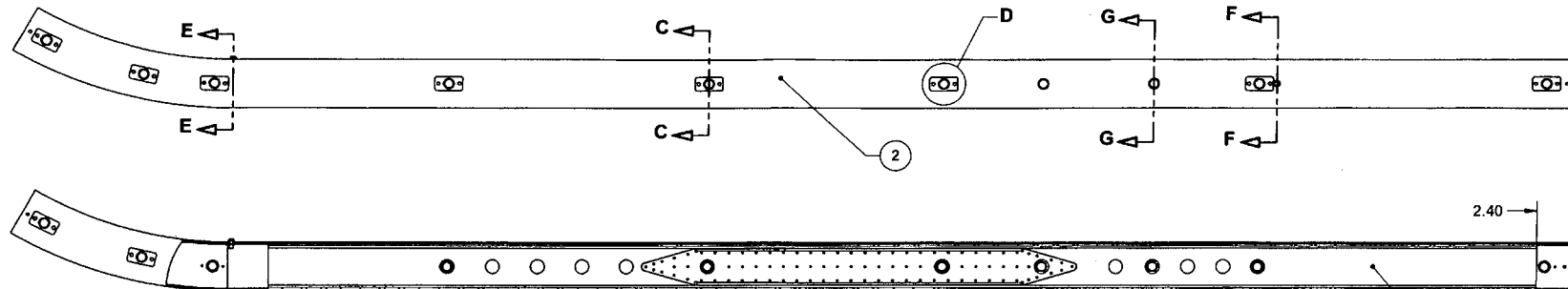
1. INSERT D4686-1 SPACER
2. SWAGE TO $\phi 0.650 +0.010/-0.000 \times 1.0$
DEEP PER QSI 002
3. TRIM/GRIND FLUSH PER QSI 002



SECTION G-G
SCALE 4X
2 PL

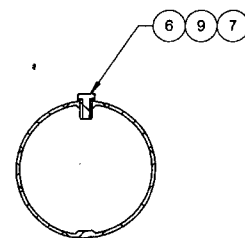
INSTALL D2973 SPACER AS FOLLOWS (2 PL)

1. CHAMFER HOLE 0.030X45 DEG
2. INSERT D2973 SPACER
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS $\phi 0.625$ DRILL TO REMOVE SPILL OVER

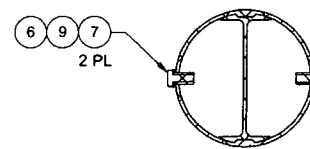


DETAIL D
16 PL (BOTH SIDES)
SCALE 4X

D4680-043 SKIDTUBE SUB ASSY



SECTION E-E
SCALE 2.5X



SECTION F-F
SCALE 2.5X

- NOTES:**
- 1) MATERIAL: N/A
 - 2) FINISH: APPLY CHEMICAL CONVERSION COATING PER DART QSI 005 4.1 PRIOR TO INSTALLING D4681-041 WEB.
POWDER COAT WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: N/A
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 17.91 lbs
 - 8) SEAL ALL MATING SURFACES USING PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT
 - 9) INSERT D4681-041 WEB INTO D4680-1 SKIDTUBE IN LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND
WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX -241/-291 ADHESIVE PER DART QSI 015
 - 10) INSTALL D4686-1 SPACER AFTER INSTALLING D4753-1 DOUBLERS
 - 11) WELDING: PER QSI 004

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	DRAWN	AP	KENT, WA	
	CHECKED	ML	DRAWING NO.	REV. C
	MFG. APPR.	JLM	D4680	SHEET 2 OF 3
	APPROVED	MP	TITLE	SCALE
	DE APPR.	DS	SKIDTUBE	NTS
	DATE	14.07.29		COPYRIGHT © 2013 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.

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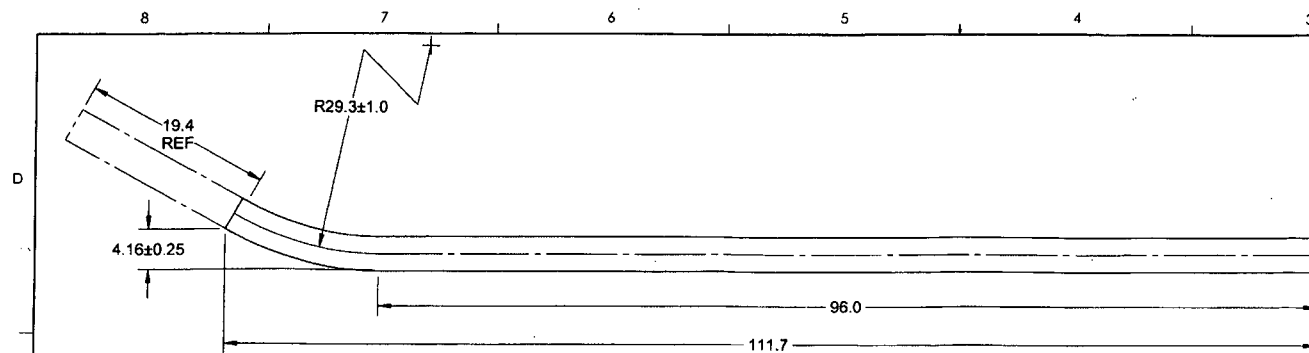
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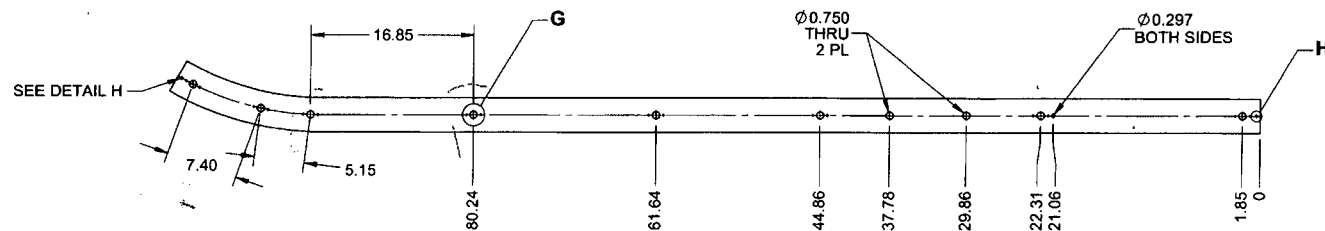
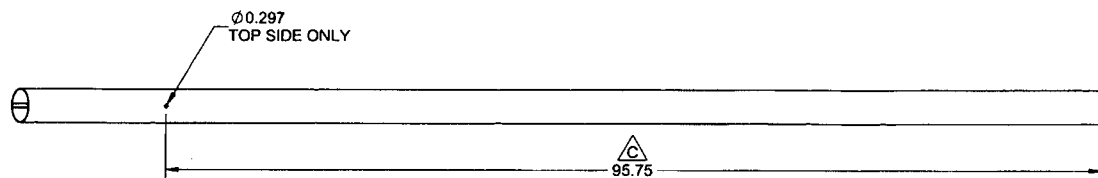
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Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

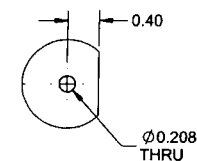
Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other _____ _____ _____ _____
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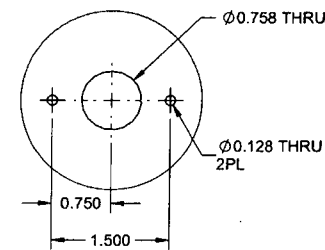
D4680-1 SKIDTUBE BENDING/TRIMMING DETAIL



D4680-1 SKIDTUBE DRILLING DETAIL



DETAIL H
SCALE 8X
2 PL



DETAIL G
SCALE 8X
8 PL

- NOTES:**
- 1) MATERIAL: MAKE FROM D2962-150 EXTRUSION
 - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 11.36 lbs

APPROVED	DESIGN	AP	DART AEROSPACE USA, INC. KENT, WA	
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	CHECKED	ML	DRAWING NO.	REV. C
	MFG. APPR.	JLM	D4680	SHEET 3 OF 3
	APPROVED	MP	TITLE	SCALE
	DE APPR.	DS	SKIDTUBE	NTS
	DATE	14.07.29	COPYRIGHT © 2013 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS UNDERSTANDING THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

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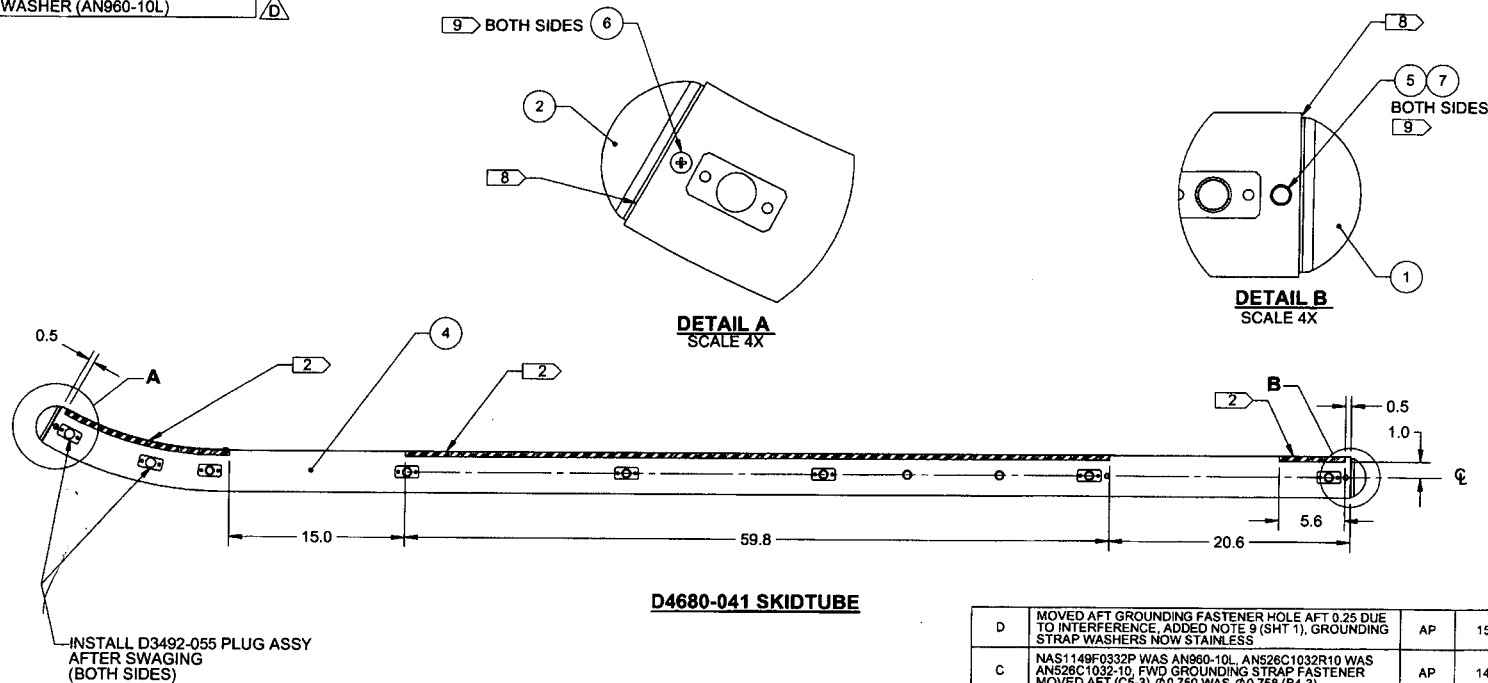
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FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence
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☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge	☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
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2	1	D2965-3	CAP
3	4	D3492-055	PLUG ASSY
4	1	D4680-043	SKIDTUBE SUB ASSY
5	2	AN3C5A	BOLT
6	2	AN526C1032R10	SCREW
7	2	NAS1149C0332R	WASHER (AN960-10L)



D4680-041 SKIDTUBE

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: PAINT TOP SURFACE OF SKIDTUBE WITH MIL-W-5044 ANTI-SKID PAINT (WING WALK) AS INDICATED TO 1.00 ABOVE CENTERLINE PER QSI 005 SECTION 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4680-041" AND B/N PER QSI 044 METHOD 6.4 ON INNER RADIUS OF SKIDTUBE BEFORE INSTALLING D2965 CAP
- 7) WEIGHT: 18.56 lbs
- 8) SEAL FAYING SURFACES WITH SIKAFLEX -241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B-2 SEALANT
- 9) INSTALL FASTENERS WET WITH SIKAFLEX -241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B-2 SEALANT

D	MOVED AFT GROUNDING FASTENER HOLE AFT 0.25 DUE TO INTERFERENCE, ADDED NOTE 9 (SHT 1), GROUNDING STRAP WASHERS NOW STAINLESS	AP	15.03.04
C	NAS1149F0332P WAS AN960-10L. AN526C1032R10 WAS AN526C1032-10, FWD GROUNDING STRAP FASTENER MOVED AFT (C5-3), Ø0.750 WAS Ø0.758 (B4-3).	AP	14.07.29
B	FWD CAP WAS D2965. NOW D2965-3. VARIOUS DIMENSIONAL CHANGES. D3492-055 PLUG ASSY WAS D3492-051. SWAGING DIMENSION NOW 0.850 WAS 0.861 (C6-2). ADDED DETAIL H (C2-3). MATERIAL D2962-150 WAS D2962-131 (A7-3). GROUND HANDLING THRU HOLES NOW WELDED, ADDED SECTION G-G (D3-2)	AP	13.09.10
A	NEW ISSUE	AP	13.02.13
REV.	DESCRIPTION	BY	DATE
DESIGN	AP	DART AEROSPACE USA, INC. KENT, WA	
DRAWN	AP		
CHECKED	DW	DRAWING NO.	REV. D
MFG. APPR.	JLM	D4680	SHEET 1 OF 3
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	SKIDTUBE	NTS
DATE	15.03.04	COPYRIGHT © 2013 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

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2015-06-08

ELN 15-551

APPROVED

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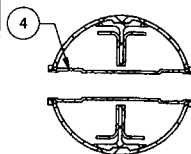
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">Skid-tube ☐</td> <td style="width: 15%;">Cross tube ☐</td> <td style="width: 15%;">Water Jet ☐</td> <td style="width: 15%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____																							
Misidentified ☐	Past Due ☐																								

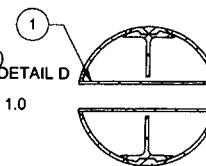
ITEM	QTY	P/N	DESCRIPTION
	X	D4680-043	SKIDTUBE SUB ASSY
1	2	D2973	SPACER
2	1	D4680-1	SKIDTUBE
3	1	D4681-041	WEB ASSY
4	8	D4686-1	SPACER
5	16	D4753-1	DOUBLER
6	3	AELS-1032-130	INSERT
7	3	AN3C4A	BOLT
8	32	MS20601AD4W3	RIVET, BLIND, CSK
9	3	NAS1149C0332R	WASHER (AN960-10L)



SECTION C-C
SCALE 4X
8 PL

INSTALL D4686-1 SPACER AS FOLLOWS (8 PL)
AFTER INSTALLING D4753-1 DOUBLERS PER DETAIL D

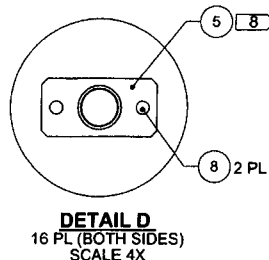
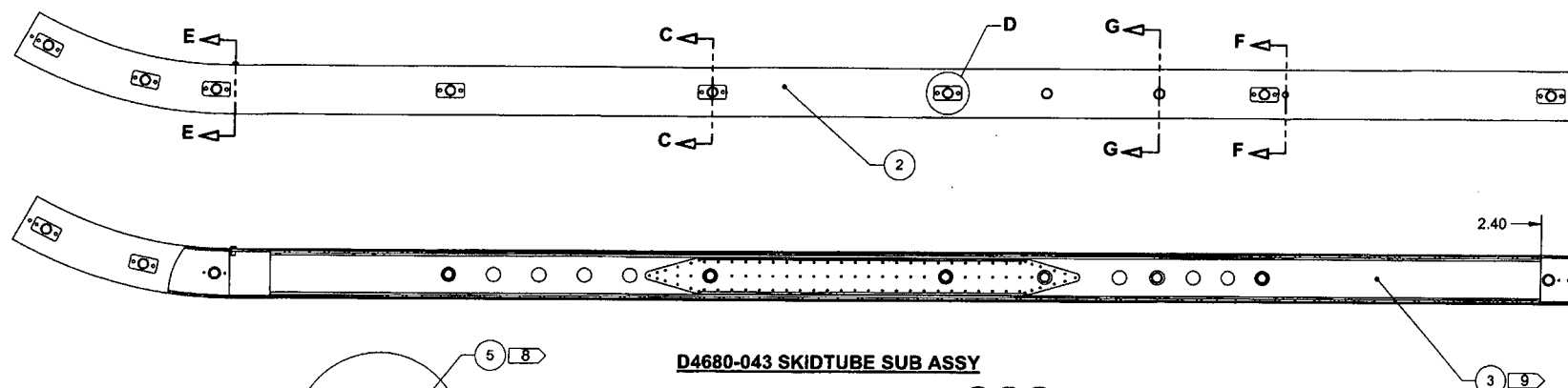
1. INSERT D4686-1 SPACER
2. SWAGE TO $\phi 0.650 +0.010/-0.000 \times 1.0$ DEEP PER QSI 002
3. TRIM/GRIND FLUSH PER QSI 002



SECTION G-G
SCALE 4X
2 PL

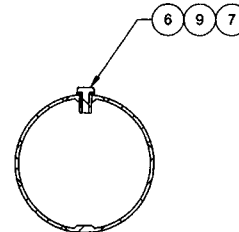
INSTALL D2973 SPACER AS FOLLOWS (2 PL)

1. CHAMFER HOLE 0.030X45 DEG
2. INSERT D2973 SPACER
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS $\phi 0.625$ DRILL TO REMOVE SPILL OVER

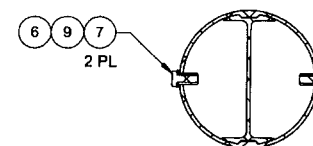


DETAIL D
16 PL (BOTH SIDES)
SCALE 4X

D4680-043 SKIDTUBE SUB ASSY



SECTION E-E
SCALE 2.5X



SECTION F-F
SCALE 2.5X

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: APPLY CHEMICAL CONVERSION COATING PER DART QSI 005 4.1 PRIOR TO INSTALLING D4681-041 WEB. POWDER COAT WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 17.91 lbs
- 8) SEAL ALL MATING SURFACES USING PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT
- 9) INSERT D4681-041 WEB INTO D4680-1 SKIDTUBE IN LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX -241/-291 ADHESIVE PER DART QSI 015
- 10) INSTALL D4686-1 SPACER AFTER INSTALLING D4753-1 DOUBLERS
- 11) WELDING: PER QSI 004

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2015-06-08

DESIGN	AP	DART AEROSPACE USA, INC.	
DRAWN	AP	KENT, WA	
CHECKED	DW	DRAWING NO.	REV. D
MFG. APPR.	JLM	D4680	SHEET 2 OF 3
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	SKIDTUBE	NTS
DATE	15.03.04	COPYRIGHT © 2013 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

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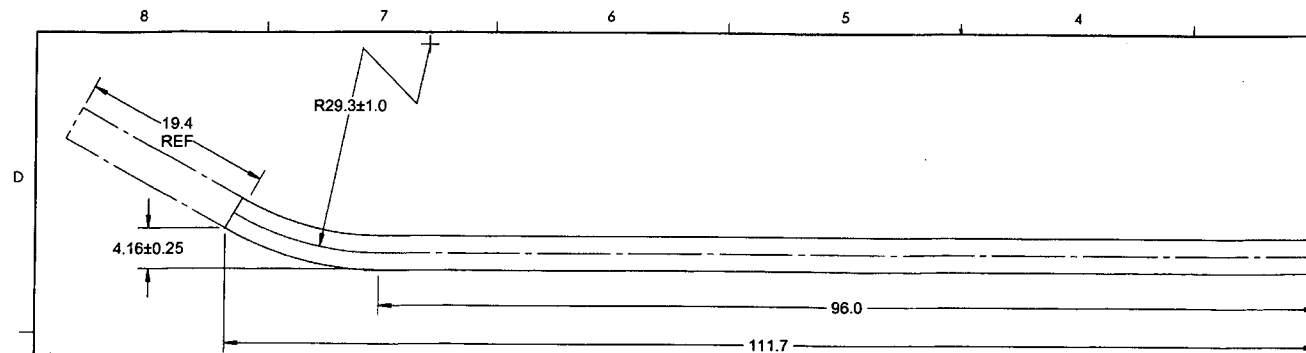


WORK ORDER NON-CONFORMANCE / UPDATE

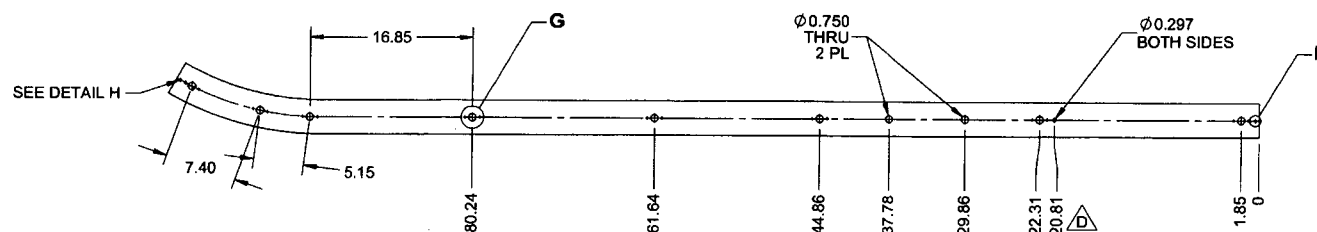
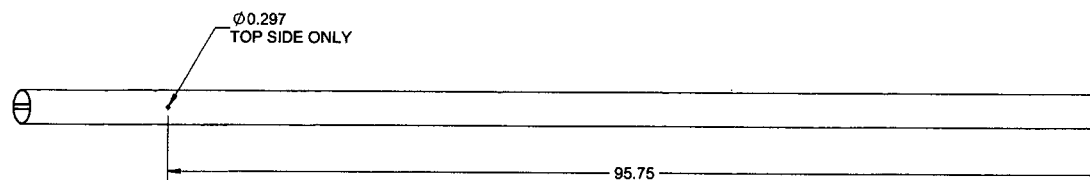
QA Closed: _____ Date: _____

Work Order update only ☐

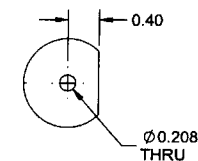
Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:15%;">Skid-tube ☐</td> <td style="width:15%;">Cross tube ☐</td> <td style="width:15%;">Water Jet ☐</td> <td style="width:15%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Description Work Order Deviation				Disposition				Completed By																	
								Lead hand / Supervisor Approval Verification																	
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Root Cause		FAULT CATEGORY																							
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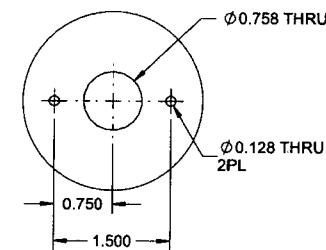
D4680-1 SKIDTUBE BENDING/TRIMMING DETAIL



D4680-1 SKIDTUBE DRILLING DETAIL



DETAIL H
SCALE 8X
2 PL



DETAIL G
SCALE 8X
8 PL

RELEASED
2015-06-08

NOTES:

- 1) MATERIAL: MAKE FROM D2962-150 EXTRUSION
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 11.36 lbs

APPROVED

DESIGN	AP	DART AEROSPACE USA, INC.	
DRAWN	AP	KENT, WA	
CHECKED	DW	DRAWING NO.	REV. D
MFG. APPR.	JLM	D4680	SHEET 3 OF 3
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	SKIDTUBE	NTS
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